



Interpretation of the Foresight report 'Migration and Global Environmental Change' for the Middle East and North Africa (until end 2011)

Mark Zeitoun

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Abstract

This document interprets the Foresight Report *Migration and Global Environmental Change* ('the Report') for the Middle East and North Africa region.¹ The Report examines the influence that environmental change ('EC') has on five drivers of migration: economic, social, political, demographic, and environmental. It emphasises that the primary driver globally is economic, implying policy responses focused on decreasing the vulnerability of livelihoods. This interpretation summarises and interprets the Report's findings for the MENA region until end 2011, and draws a number of key messages. The main drivers of migration are political and economic, for instance, not environmental. Many people throughout the region remain 'trapped' by politics or economics, while the possibilities of migration to reduce vulnerability are squandered by a system that favours exploitation of the most vulnerable. The primary EC threats in the region are increased desiccation and sea-level rise, both of which are expected to continue to impact agricultural livelihoods in particular. While EC-influenced migration is typically seen as an additional threat, it can also be a force for economic and social development in both home and host communities. It is also found that EC or migration policy targeting the development of more resilient livelihoods is well-suited to address the concerns and leverage the benefits of migration, but will have to confront low economic growth rates, uncoordinated governance, and interests vested in the status quo.

Summary of migration and environmental trends in the MENA region

The Report divides the world into three ecological zones, of which the 'dryland' and 'coastal' are prominent in MENA. At the time of writing (2011), the main projected EC threats in the MENA region are rises in temperature and changes in precipitation patterns, which are expected to lead to desiccation more generally; and sea-level rise, resulting in greater saline intrusion of groundwater and shifting and more erratic food-growing seasons (see Burke et al (2011) and Annex A for a summary of expected changes).

The biggest impact of EC in MENA is thus expected to be felt through agricultural livelihoods. The Report demonstrates how the impact will in turn affect and is being influenced by the economic, social, political, demographic and environmental drivers of migration. As quantified in Annex B, waves of people flee war or emigrate for better work opportunities within the region (e.g. to Gulf Cooperation Council (GCC) or North Africa countries), through it (on their way to Europe) or well beyond it (e.g. North or South America). The most significant migrations in the region are from post-colonial economic migrants from North Africa to Europe, and political migrants from the Eastern Mediterranean. So great are the population

¹ The interpretation was commissioned by Foresight, UK Government Office for Science on behalf of the World Bank. It has been reviewed by 4 peers at both organisations, though – along with the other regional interpretations – never published. It is published (late) here as a DEV Working Paper with the consent of the Government Office for Science. As the interpretation is not comprehensive, nuance has in places been passed over by the necessary generalisations. Except where otherwise noted, page numbers refer to the Report. Many thanks for discussions and interviews to Hammou Laamrani, Guy Jobbins, Michael Talhami, Marwan Owaygen, Neil Adger and Stephen Bennett.

movements in MENA that it counts 8 of the top 10 countries² with the highest share of international migrants relative to the native population (IOM, 2011: 75).

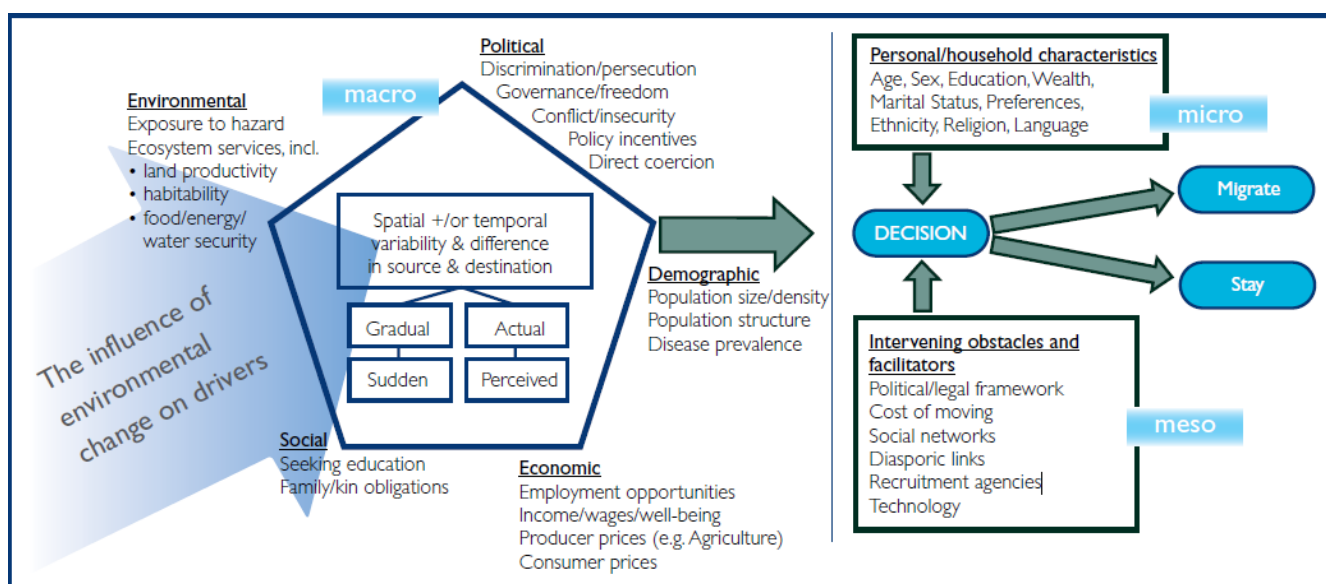
Current national and regional policy on migration is generally exploitative, though changes in human and labour rights are a step towards a more livelihoods-centred approach. Efforts to progress in this direction will face challenges due to poor governance, un-coordinated line ministries, and – for several countries – insufficient funds. The recent political upheaval in the region adds three more sources of uncertainty to migration (p56), and may eventually reduce or compound the vulnerability of ‘trapped’ and exploited populations.

Summary of the Report’s findings for the MENA region

The very broad findings of the Report are generally very relevant to the MENA region,³ and may be grouped into three categories: I. Political and economic drivers are particularly important drivers in the MENA; II. The conditions under which people are *displaced*, or choose or are forced to *stay* or to *migrate* affects whether the outcome is positive or negative; and III. States and communities that are wealthy and well-governed are the most resilient.

I. Political and economic drivers are particularly important drivers in the MENA, notably in terms of conflict and agricultural livelihoods. As shown in Figure 1, the Report conceptualises EC influencing the five drivers of migration.⁴ Select evidence for the MENA region is provided in Table 1.

Figure 1. Foresight Report’s conception of the influence of EC on five drivers of migration.



² These are Bahrain, Israel, Jordan, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

³ The emphasis placed on mountain zones (Section 3.4) will be of interest to policy-makers concerned with the fringes of the region (in Iran and Morocco), while the discussion on mega-deltas and low-elevation coastal zones (Section 3.2) is more applicable to Asia than MENA.

⁴ This builds on conceptual work done by the World Bank MENA office (World Bank, 2010: Fig. 3).

The internal and international political strife throughout the region in the last century has led to some of the largest and most enduring migrations in the world. This socially or politically-driven ‘rapid onset’ migration is typically not influenced directly by environmental change, but can contribute to pressure on natural resources such as water (see e.g. Bernauer, Koubil, & Böhmelt, 2011), particularly when these are physically scarce or poorly-managed.⁵ Tensions over natural resources may improve or degrade relations between communities and states, depending on the power structures and vested interests of the broader political context (Hartmann, 2007; Zeitoun & Mirumachi, 2008), and may lead to further migration or trapped populations (see e.g. Selby & Hoffman, 2011). The Report does not discuss the merits of food trade and virtual water in reducing or compounding regional physical and social scarcity, though these are being considered (see e.g. Hoekstra (2010)).

Table 1 Some evidence of the five drivers of migration in the MENA region.

Driver	Select recent evidence in MENA region
Economic⁶	<p><i>Within MENA:</i> Skilled and unskilled labour migrating to GCC countries (i.e. Eastern Mediterranean engineers, North African labourers); Rural to Urban migration (e.g. into Cairo); 1980s Syrian workers in Lebanon, etc.</p> <p><i>Outside MENA:</i> Skilled and unskilled labour migrating to GCC countries (i.e. British nurses, Bangladeshi labourers);</p> <p>Migrants from Sub-Saharan Africa migrating to North Africa (e.g. from Ghana);</p> <p>Migrants from Sub-Saharan Africa migrating to Europe (via North Africa).</p>
Social⁷	<p><i>Established inter-generational emigration leads to enduring remittances and social interaction</i> (e.g. Lebanon and Egypt amongst top 10 countries for remittances (Table 4.1)).</p>

⁵ The estimated 2M Iraqi refugees in Damascus in 2003, for example, posed a water-provision problem in the already water-strained capital, which is now further strained by the needs of new Syrian migrants from the North East following changes in land tenure, water mis-management, and three dry years (2007-2009) (tbc, forthcoming). There is also a geopolitical component to this interaction, considering further that the water in question flows from Turkey and into Iraq (the Euphrates River).

⁶ Characterised as “Imbalances in labour markets and wage differentials at the macro level” (p44).

⁷ Characterised as “Access to family, social or other networks facilitates migration by migrants, while limited family and other ties also explain a lack of migration by others” (p44).

Driver	Select recent evidence in MENA region
Political⁸	<p><i>International conflict</i>: 1948, 1967 Palestinian refugees to Jordan, Syria, Lebanon, and outside region; post 1948 Jewish emigration to Israel; 1975 Sahrawi refugees to Algeria; 1991 Palestinian and Yemeni displacement from Kuwait; 2003 Iraqi refugees to Jordan, Syria, and outside region;</p> <p><i>2011+ Political upheaval</i>: Up to 600,000 migrants in Libya (from Egypt, Bangladesh, etc.) had left by June 2011 (IOM 2011: 50)); 2011-2013 Syrian refugees to Jordan, Lebanon, Turkey, Iraq, Armenia;</p> <p><i>Repression</i>: Forced settlement of Bedouin (in Syria, Israel); Displacement of Kurds and Arabization of Kurdish areas (in Syria, Iraq); displacement of Palestinians and settlement of West Bank.</p>
Demographic⁹	<p><i>Youth bulge</i>: Current 'youth bulge' in MENA (96 M people in 2010 between the ages of 20-29, while the largest generation ever born is now entering the work force (Fargues, 2008: 3)), many of which are expected to emigrate (see also Burke et al (2011: Table 2)) with also induced by differential growth rates between Africa-MENA-Europe;</p>
Environmental¹⁰	<p><i>Coastal degradation</i> (erosion, flooding, salinization of groundwater) affects agricultural and urban livelihoods (e.g. Alexandria, Tunis, Tripoli Lebanon) (see e.g. El-Batran, 2010); <i>Physical water scarcity</i> (e.g. extended droughts) (Verner, 2011) and <i>social water scarcity</i> (water cost, denial, mismanagement) affects agricultural livelihoods (e.g. Northeast Syria (2007-2010), West Bank (2011), Southern Iraq (> 2003) (tbc, forthcoming; World Bank, 2009)).</p>

Primarily because environmental change is projected to compound human activity-induced desiccation, *farming families (and the agricultural sector) are deemed to be the most vulnerable*. Drops in staples production in the MENA region have been estimated by 2050 at about 33% in rice, 7% in wheat, 8% in Maize and 4% in millet¹¹ (Nelson et al., 2009: Table 3). The reduction in yields is expected to induce higher water demand, while higher evapotranspiration rates and temperature will lead to increased crop water requirements. The location and extent of the resulting economically-driven migration influenced by this slow-onset environmental change is difficult to predict, but likely a function of the ability to move and vulnerability of the communities in question (see below).

II. The result of being displaced, or choosing or being forced to stay or to migrate can be positive or negative, for both the home and host communities. The Report's conception of

⁸ Characterised as "Displacement, or forced migration, may be triggered by the breakdown of governance structures or the emergence of violent conflict,... [and] conflict and political repression can prevent people from leaving, leading to cases of 'involuntary immobility' (p45).

⁹ "demographic pressures are more likely to influence migration in interaction with other drivers" (p45)

¹⁰ "a change in ecosystem services directly affects well-being and the demand for migration, ... [and] rapid-onset extreme environmental events, such as floods ...trigger displacement. ... "(p45)

¹¹ The figures compare with estimates of reductions of crop production in Egypt by year 2050: rice - 11%; wheat – 4.8 to 17.2%; maize – 14 to 19% (Abou Hadid, 2009: Table 1). The drop in production in wheat in MENA is considerably greater than the projected global drop (of about 25%).

the dynamics of the choice (or lack of it) is provided in Annex C, while the advantages and disadvantages in the MENA region are shown in Table 2 and discussed following.

Table 2 Some outcomes, advantages and disadvantages of migration in the MENA region.

Outcome	Examples of disadvantages and advantages in the MENA region
Migration	<p>Disadvantages: Migration can lead to <i>maladaptation</i> (World Bank, 2010: 4); <i>Brain drain</i> (e.g. from Kuwait and GCC - replaced by Asians and Africans) (p60); <i>Uncontrolled planning</i>: Urbanisation e.g. in peri-urban areas of Cairo (Goell, El-Lahham, Hussen, El-Khishin, & Soliman, 2009; Verner, 2011) rapidly increasing in wake of 2011 revolution, as farmers convert land to urban to increase value; <i>Internal tensions</i> (e.g. farming families leaving Northeast Syria 2007 – 2011), <i>international tensions</i> (e.g. Iranian migrants to Iraq); <i>unprotected labour force</i> allows very poor treatment of domestic workers and labourers in host countries (e.g. Asian maids in Lebanon, GCC countries) (Chalcraft 2011); <i>Repression</i> (e.g. control of Kurdish populations (Iraq, Syria, Iran)).</p> <p>Advantages: Migration as <i>adaptation</i> (World Bank, 2010: 3); <i>Remittances</i> – estimated at USD35.4 billion in 2010 (IOM, 2011: 75); pressure leading to <i>more productive natural resource use</i> (Abdelali-Martini et al., 2010); positive social and economic contributions to host communities (UNDP, 2009);</p>
Displacement	<p><i>Internal tensions / Violations of Human Rights</i> (e.g. development-induced displacement (as in forced settlement of Bedouin, Ma'dan, Kurds in Syria)); <i>Operational challenges</i> for those mandated to manage displaced peoples (UNHCR, ICRC etc.); <i>International conflict</i> (e.g. refugees (see Table 1) in Syria, Jordan, 2011); Migrant workers fleeing violence in Libya, 2011 (from Egypt or Asia); etc.</p>
Stay - trapped	<p><i>Politically trapped</i> – people lacking the political status that would permit emigration (e.g. 'unpapered' refugee population who have lost or never had passports, or children of women who are disallowed from passing their citizenship on and have difficulty gaining access to most countries (e.g. Sahrawi (Fiddian-Qasmiyeh, 2011), GCC, Lebanon); vulnerable populations hostage to geopolitics (e.g. Palestinians in Gaza).</p> <p><i>Economically trapped</i>¹² – people prevented from emigration due to lack of financial capital (p105) (e.g. street workers in Cairo, Rabat, Baghdad, Tehran).</p>

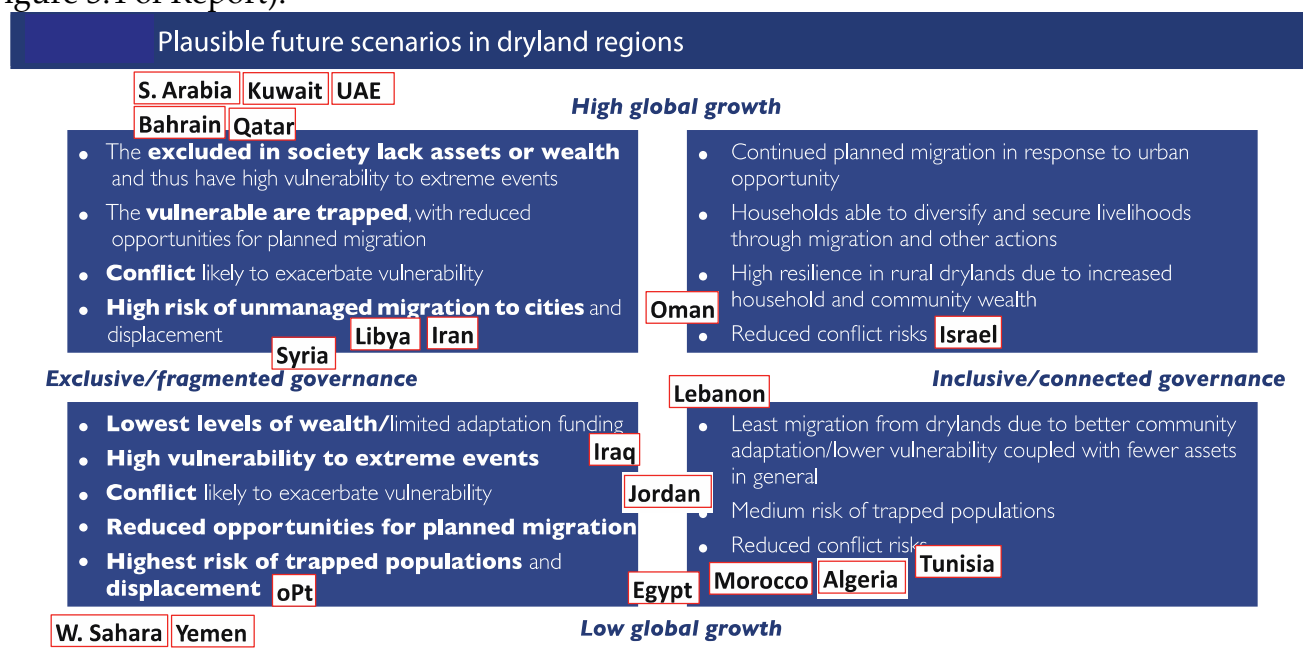
The Report builds on previous work (e.g. Mcleman, 2011; UNDP, 2009) to challenge negative misconceptions about migration and development, and programmes designed to avoid it outright. **Whether migration is positive or negative for the migrants and host communities depends very much on the assests of the communities, and on the conditions of displacement and arrival.** 'Portable' assets can be of particular positive use; education opens up opportunities abroad, for instance Indeed, one of the most striking features from Table 2 is the positive aspect of remittances. The economic gain they provide for the home country is significant in Yemen (Joseph & Wodon, 2010), estimated at 10% of the GDP for Morocco, 19% for Jordan, 25% for Lebanon, and 30% for the occupied Palestinian territory (Gemenne, 2010), and up to 50% of households with migrants in Syria (Abdelali-Martini et al., 2010). On the

¹² This category is also called "immobile" in the Report (see p12).

other hand, forced migration (or displacement or stationarity) can and has caused serious tensions resulting in violent conflict at the local and national level (e.g. political organisation of Palestinian refugees in Jordan (1970s) and Lebanon (1980s)). Likewise, significant reliance on external workers (as in Saudi Arabia, where foreign workers outnumber nationals (IOM, 2011: 76) can render both a wealthy country and migrant communities therein particularly vulnerable to the wraths of war – as occurred with the expulsion of skilled Arab migrants from Kuwait in 1990.

III. States and communities that are wealthy and well-governed are the most resilient. The ability of governments to develop and implement reactionary or strategic policy to migration challenges is seen to be very much a function of their levels of governance and of wealth (see p18 and WDR (2010)). Timely construction of flood defences and adaptation planning or implementing wide-ranging shifts in cropping patterns requires funds and know-how, after all. Successful implementation of such policy would also require considerable intra-governmental coordination, as well as the regulated involvement of the private sector and civil society. In the MENA region, effective governance and wealth are very unevenly distributed, as the plot of Figure 2 shows.

Figure 2 Rough indicative plot of MENA countries in 2012 against four plausible future scenarios in dryland regions, as a function of global growth vs. governance (adapted from Figure 3.4 of Report).

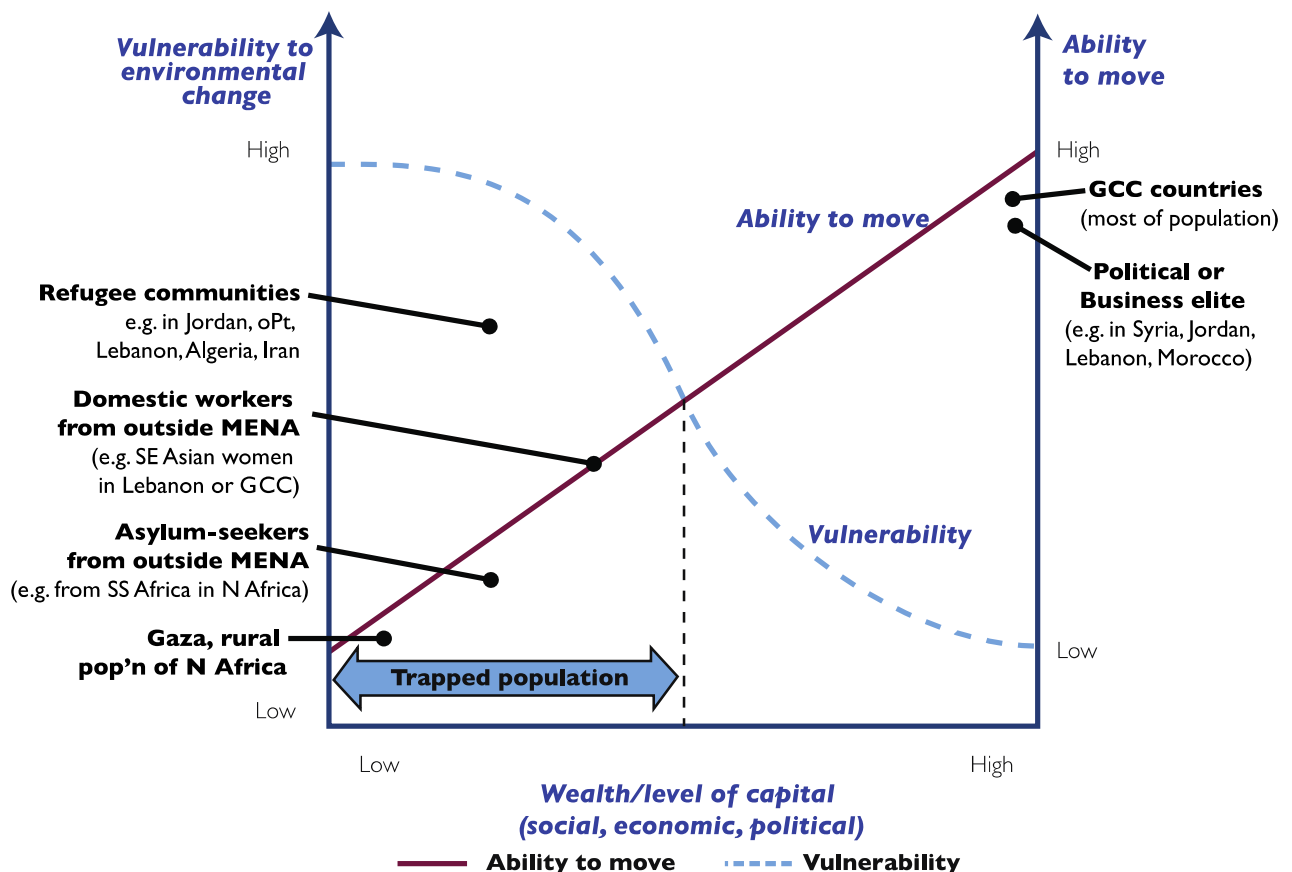


Livelihood, environmental or migration policy in most MENA countries is driven from the top, with little involvement of civil society and a blurring of politics with the private sector. This model of governance can be very efficient when there is buy-in from the highest level, as in the 2010-2020 Green Morocco Plan (KoM, 2009) which is supported and driven by the Royal Palace. Otherwise it is restrictive, with ministries acting independently, and unable to reflect the inter-dependence of migration drivers or lacking the strategic vision to deal with the

projected influence of EC. Coastal management is the responsibility of the national government in some North African countries (e.g. in Tunisia – ‘Agence pour la protection et amelioration du litoral’), but is elsewhere left to the affected communities themselves (for instance in Egypt, where some of the new planned cities have been built on parts of the Nile Delta that are already or soon to be flooded).

The Report emphasises that wealth matters also for individuals and communities. The most vulnerable communities within the most vulnerable countries are expected to bear the brunt of the lack of coherent policy and action on EC and migration. Wealth and vulnerability are directly related to the three potential migration outcomes (where ‘wealth’ includes also political and social capital (i.e. protection)). As Figure 3 shows, communities with great social, political and economic capital have mobility options available to them, while the most vulnerable can be ‘trapped’. ¹³

Figure 3 Schematic representation of the relation between vulnerability, ability to move, and wealth (in terms of social, economic and political capital), plotted with an indicative selection of MENA communities (adapted from Figure 3.20 of Report).



¹³ “Vulnerability will be increased if migration occurs in unplanned ways, or migrants end up in areas of high environmental risk, such as low-lying urban areas in mega-deltas or slums in water insecure expanding cities... poorer households are likely to be ‘trapped’ in circumstances where they are at once more vulnerable to environmental change and less able to move away from it “ (p67).

Emphasising the lack of advantages that may come from trapped populations, the Report discusses and proposes a number of guidelines for policy. The development of regional migration policy is hampered, however, by the variety in quality of national governance and wealth, as we will see.

Relevant local, national and regional policy in MENA

The full range of general policy conclusions from the Report is provided in Annex D, while Table 3 presents some of this policy at different levels of governance in the MENA region, which are summarised and discussed following. These include National migration policy within MENA countries and in the region as a whole is poorly developed; Local policy responses are currently far from the ideal sought; EU policies place a burden on asylum-seekers, and fail to take advantage of the positive aspects of migration; Progressive policy in the MENA region will be heavily tested by the poor governance existing in many countries; and ‘Trapped’ communities that are unable to migrate should be a particular policy concern.

Table 3 Non-comprehensive list of local, national, and regional policy related to migration in the MENA region, 2012.

i - projects which look to utilise remittances / diasporas for adapting to environmental change in the sending area; ii - projects which look to make migration a more positive experience for migrants through targeted education schemes; or supply of basic services, etc.; iii - projects which look to facilitate migration through enabling mobility – e.g. provision of national insurance cards which make it easier to claim benefits anywhere in a country; iv - regional migration schemes or initiatives – e.g. ECOWAS free movement; v - ‘urbanisation as adaptation’; vi – forced settlement policy; vii - related environmental policy.	
GCC + Yemen	
Bahrain	ii – replacement of Kafala system (ILO, 2011a: 17);
Kuwait	ii – replacement of Kafala system (ILO, 2011a: 17); ii – MOU signed with Indonesia for increased protection of migrant workers (IOM, 2011: 70);
Oman	ii – replacement of Kafala system (ILO, 2011a: 17);
Qatar	ii – MOU signed with Indonesia for increased protection of migrant workers (IOM 2011: 70);
S.Arabia	vii - shift from emphasis on local food production (e.g. halting wheat production by 2016 (El Houry, 2011)); reforms to labour policy in relation to migrants (e.g. relaxed restrictions on employment);
UAE	ii – MOU signed with Indonesia for increased protection of migrant workers (IOM 2011: 70) (but is not challenging the Kafala system (IOM 2011: 76));
Yemen	ii – UNHCR management of camps of migrants from Horn of Africa or (government management of IDP centres); vii – informal shift in water use from staples to cash crops, with increased value of water (e.g. <i>qat</i>);
Eastern MENA	
Jordan	<i>Amman</i> - Informal absorption of 1M refugees from Iraq (2003+) also leads to economic gains from high concentration of international organisations, and US foreign assistance); ii – 2009 adoption of a national strategy to combat human trafficking (ILO, 2011a); ii – MOU signed with Indonesia for increased protection of migrant workers (IOM 2011: 70); vii – study of feasibility of the Red Sea – Dead Sea Canal, or JRSP; development of the Disi Aquifer both for water for Amman, and local use (and emigration) to desert;

Lebanon	ii - Establishment of National Steering Committee on Migrant Women Domestic Workers 2005 (ILO 2011); ii – MOU signed with Indonesia for increased protection of migrant workers (IOM 2011: 70); ii – amendments of labour law restricting employment rights to Palestinian refugees (2005) (ILO 2010: 15); ii – informal management of Syrian refugees (2012) considered ‘visitors’ (as in Turkey), thus withheld refugee status; ad-hoc management of labourers (mainly from Syria and from Sudan, Egypt, SSA);
Iraq	v - Attempts to re-settle the Iraqi marshlands (2004+); ad-hoc management of Iranian migrants (social (religious) and economic);
Iran	ii – government management of Afghani or Pakistani (Baluchistan) refugees (1990s +); ii- informal absorptions of Azeri refugees (1988 +); vii – national plans for food self-sufficiency
Israel	vi - Forced settlement of Bedu e.g. in Galilee and Negev (Development-induced displacement [ref]) ; ii – Law of Return encouraging migration of Jewish people to Israel; Citizenship and Entry to Israel Law (2005) limiting Palestinian citizenship rights, etc.; Population transfer through Israeli settlement of West Bank; vii – study of feasibility of the Red Sea – Dead Sea Canal; Ad-hoc management of migrants from Sudan (2007 +);
oPt	vi – Jordan Valley Master Plan (2004) to absorb expected Palestinian refugees;
Syria	<i>Damascus</i> - Informal absorption of 1M refugees from Iraq (2003+); vi - Forced settlement of Bedu e.g. around Palmyra (Chatty, 2010); ii – UNHCR management of camps of Iraqi refugees on Syria-Iraq border (2003); vii - Shift from policy towards food self-sufficiency away from cotton towards production of staple foods (~2005-2009);
North Africa	
Algeria	i - Informal sending of remittances (primarily from France) and important inter-generational international links (see e.g. Fargues (2004)); ii – 2008 Adoption of law on entry, treatment and displacement of irregular migrants (Labdelaoui, 2008); changes to nationality laws for diaspora (Bouklia-Hassane, 2012);
Egypt	v - Vision Egypt 2030 for new cities (Goell et al., 2009; see also World Bank, 2008): construction of 22 new cities in desert areas e.g. Toshka, Nasr City, etc.; Ad-hoc management of migrants from Sudan, sub-Saharan Africa;
Libya	Ad-hoc management of migrants (<2011) from sub-Saharan Africa, Egypt, etc. (professionals, skilled and unskilled labour) (ILO, 2010);
Morocco	i - Informal sending of remittances (primarily from France) and important inter-generational international links (see e.g. Fargues (2004)); iii - Green Morocco Plan (2010-2020) designed to prevent “massive rural-urban migration” (KoM, 2010); iii - Consideration of crop insurance scheme for larger farmers, and application to smaller farmers;
Tunisia	i - Informal sending of remittances (primarily from France) and important inter-generational international links (see e.g. Fargues (2004)); iii - Dedicated government agency for coastal issues (Agence pour le protection et amelioration du littoral (APAL)) to deal with urban challenges (e.g. flooding in Tunis);
Western Sahara	ii - Sahrawi refugees in Algeria and elsewhere – politically and economically trapped populations;
Regional/International	
Arab League	Establishment of Anti-Human trafficking Unit (Jan 2011); i) ii) iii) - Brasilia Declaration of the South American and Arab Countries Summit (SAACS, 2005: Clause 12.3);
Euro-Africa	iii and iv - Rabat Plan of Action of the Euro-African Ministerial Conference on Migration and Development 2006 between EU and African states regarding

	professional capacity-building (RAP, 2006);
EU	iv - <i>Fortress Europe</i> – and “externalisation of migration controls” beyond EU, esp. to North Africa (see discussion below);
International ¹⁴	International conventions e.g. IASC, UNRWA, Geneva Refugee Convention 1951 and 1967 (see discussion below); <i>Actors</i> : UNHCR, UNRWA, ICRC, etc. World Bank - Repatriation and Livelihood Restoration for Migrant Workers project;

National: Migration-environment issues are very context-specific, and as seen in Table 3, each country has its own particular migration issues and policy responses. Government and governance in several MENA countries appears to be shifting, following the political upheavals of 2011. The governments of Oman, Jordan and Morocco, for example, are reforming including in areas related to water use, food production, and rural-urban migration. The majority of other policy responses in Table 3 deal with improving conditions for refugees and migrant workers, in response to criticism of widespread abuses of human rights and labour laws. These exist alongside practice of development-induced displacement of Bedu tribes, discriminatory migration policy (e.g. based on religion or ethnicity), and refusal of national or refugee status to migrants. The influence of EC on such movements – primarily through changes in agricultural livelihoods – is expected to lead to ever-greater social tensions.

While further research is underway in Algeria, Morocco, Egypt, Syria and Yemen,¹⁵ it may be safe to generalise that – as everywhere – coordinated policy responses from different ministries required to deal with the interacting drivers of migration is absent. On the whole, **national migration policy within MENA countries and in the region as a whole is poorly developed**, meaning that both the positive aspects of portable capital (education and remittances, for instance) are under-developed, and that migrant workers and refugees remain vulnerable and exploited.

Local: With urban services strained in most MENA cities, they may be prone to what the Report calls “urbanisation without growth” (p164). Indeed, the “double jeopardy future” (p10) of increased migration and exposure to risks from environmental change already threatens Alexandria, Tunis, and in particular Cairo (Report Figure 7.1). Some MENA countries appear to be engaging in what the Report calls ‘urbanisation as adaptation’.¹⁶ The planned and ongoing construction of new cities especially in Egypt (with the flailing Vision Egypt 2030 (CARE, 2009)) is a prime example, but the practice is evident also in Israel (settlements in the West Bank –a prime driver of conflict), and in Iraq, through re-settlement of the marshes of the Ma’dan people (see Mcleman, 2011: S115). Attempts to reverse urban-rural migration have been attempted in Morocco with unintended environmental consequences (e.g. depletion of the groundwater aquifer (IDRC CC 2011)). Informal settlements are just as pervasive and

¹⁴ Global policy developments are tracked in IOM 2011 (Chapter 2), including the Global Forum on Migration and Development, Regional consultative processes on migration (RCPs), and an interesting discussion on ‘Emerging Policy Space’.

¹⁵ By The World Bank, AFD and RAND corporation (Grant, 2010).

¹⁶ p180 - “development of new secondary cities must not be ruled out”.

problematic throughout the region: apart from the expected tensions generated by intrusion, local vulnerable communities often resent the assistance provided to the populations they are obliged to host or live alongside (e.g. SSA refugees in Yemen, Iraqi refugees in Syria (see e.g. AFED (2012)). **Local policy responses are currently far from the ideal** recommended by Chapter 9 of the Report.

Regional/international: The most important regional migration policy relevant to MENA is driven from outside it by the EU. Tightening of the EU's borders (the beginning of the creation of 'Fortress Europe') in the 1990s soon moved to the "externalisation of migration controls" (Bilgic, 2011: 5). According to de Haas, this has "caused a diversification of trans-Saharan migration routes and Mediterranean crossing points" (de Haas, 2011: 3), thus shifting migration routes from mainly Algeria and Libya to most North African countries.¹⁷ **EU policies have been heavily criticised for the burden they place on asylum-seekers, and for taking no advantage of the positive aspects of migration**¹⁸ (see e.g. IOM 2010:50). The EU policy is also seen as conflicting, given EU's ageing and shrinking population, and MENA's 'youth bulge' (Gemenne, 2010).

The Report also details the international governance structure, which includes international conventions such as the 1951 and 1967 Geneva Refugee Convention (p151) and the UN Inter Agency Standing Committee (p154). These are meted out between migration and labour-specific agencies such as the UNHCR, IOM, ILO and UNRWA (see de Hey, 2010; IALIIS, 2011). Several of the international agencies involved in this governance do recognise the positive aspects of migration (points i) ii) and iii)), and have their own policy on migration (the World Bank, for example, has set up set up in Bangladesh in part to help with exodus of refugees from Libya (IOM 2011:52)). The Report discusses policy extensively, and readers are encouraged to consider the many recommendations from Chapter 9 and in Laczko (2010). **Such policy in the MENA region will be heavily tested by the poor governance existing in many countries** (refer back to Figure 2), however, and suggestions that governments should take up e.g. Guiding Principles to IDPs (p153) may be more relevant to well-governed states than those to the target vulnerable communities on the left-hand side of Figures 2 and 3.

Constrained Migration: 'Trapped' communities that are prevented from migration are of particular concern in the Report. Referring back to Figure 3, this is the case for most of the entire population of Gaza (whose exits face obstacles from Israeli, Egyptian and potential host-country administrations), domestic workers and labourers in the GCC countries, un-papered migrants from sub-Saharan Africa in North Africa, and (often rural) inhabitants throughout the region lacking or denied the financial and legal opportunities. The drivers behind such

¹⁷ The political economy of shifting migration routes (and policy, as well as economic and political drivers of migration around the Mediterranean are clearly elucidated in de Haas (2011), while IOM (2008) focuses on migration between sub-Saharan Africa, North Africa and Europe.

¹⁸ An example of softer measures being introduced is the 2006 Rabat Plan of Action (RAP, 2006) and the development of "Migration Toolkit" developed for Mali and Senegal meant to deal with migration to Spain via Morocco (ILO, 2011b: 116).

restrictions are clearly political and social, which the Report addresses only indirectly through its emphasis on “‘inclusive and connected’ approach to governance” (p193).

References

- Abdelali-Martini, M., Hamza, R., Ahmed, M., Aw-Hassan, A., Ibrahim, K., & Al-Shater, T. (2010). *Gendered Migration in the Dry Areas: Implications for Resource Management in Syria*. Paper presented at the First Workshop on Climate-Induced Migration and Displacement in MENA, Marseille, 15-16 July 2010.
- Abou Hadid, A. F. (2009). Impact of Climate Change: Vulnerability and Adaptation - Food Production. In M. K. Tolba & N. W. Saab (Eds.), *Arab Environment: Climate Change - Impact of Climate Change on Arab Countries*. Beirut: Arab Forum for Environment and Development.
- AFED. (2012). Climate Refugees: millions of migrants from drought, storms, floods and rising sea levels. (Arabic) *Al-Bia Wal-Tanmia - Environment & Development*
- Bernauer, T., Koubil, V., & Böhmelt, T. (2011). *SR12: Environmental changes and violent conflict*: UK Government Office for Science: Foresight.
- Bilgic, A. (2011). *CS8: Is the EU offloading future migration issues to the 'southern neighbourhood'?: Thinking environmental migration in relation to externalisation*: UK Government Office for Science: Foresight.
- Bouklia-Hassane, R. (2012). *Migration en Algérie: nouvelles tendances*. Algiers: Robert Schuman Centre for Advanced Studies, European University Institute.
- Burke, S. M., Mulligan, M., Parks, K., & van Soesbergen, A. (2011). *DR8a: Quantifying change in ecosystem services and exposure to hazards in the Mediterranean basin over the next 50 years that might be relevant to migration*: UK Government Office for Science: Foresight.
- CARE. (2009). *In Search of Shelter: Mapping the Effects of Climate Change on Human Migration and Displacement*: CARE International, United Nations University, and Earth Institute of Columbia University.
- Chatty, D. (2010). *Displacement and Dispossession in the Modern Middle East*. Cambridge: Cambridge University Press.
- de Haas, H. (2011). Mediterranean migration futures: Patterns, drivers and scenarios. *Global Environmental Change*(doi:10.1016/j.gloenvcha.2011.09.003).
- de Hey, S. (2010). *Global Governance to Address Climate Migration*. Paper presented at the First Workshop on Climate-Induced Migration and Displacement in MENA, Marseille, 15-16 July 2010.
- El Houry, R. (2011). The Gulf Countries' Water Crisis. *Muftah on-line magazine*.
- El-Batran, M. (2010). *Climate Change and Its Impacts on Internal and External Migration: the case of Egypt*. Paper presented at the First Workshop on Climate-Induced Migration and Displacement in MENA, Marseille, 15-16 July 2010.
- Fargues, P. (2004). Arab Migration to Europe: Trends and Policies. *International Migration Review*, 38(4), 1348 - 1371.
- Fargues, P. (2008). *Emerging Demographic Patterns across the Mediterranean and their Implications for Migration through 2030*. Washington, DC: Migration Policy Institute - Transatlantic Council on Migration.
- Fiddian-Qasmiyeh, E. (2011). *Protracted Sahrawi displacement: Challenges and opportunities beyond encampment*. Oxford: Refugee Studies Centre, Oxford Department of International Development, University of Oxford.
- Gemenne, F. (2010). *Climate-induced migration and the securitization of borders in the Mediterranean: Conflicting policy directions*. Paper presented at the First Workshop on Climate-Induced Migration and Displacement in MENA, Marseille, 15-16 July 2010.
- Goell, E., El-Lahham, N., Hussen, W., El-Khishin, S., & Soliman, S. (2009). *Sustainable Cities in Egypt: Learning from Experience: Potentials and Preconditions for New Cities in Desert Areas*. Cairo: The Egyptian Cabinet Information and Decision Support Center - Center for Future Studies.
- Grant, A. (2010). *Climate Change and Human Mobility: Coping Dynamics and Strategic Responses in the Middle East and North Africa: Methodological Overview of World Bank-AFD-Rand Study*. Paper presented at the First Workshop on Climate-Induced Migration and Displacement in MENA, Marseille, 15-16 July 2010.
- Hartmann, B. (2007). *Climate Refugees and Climate Conflict: Who's Taking the Heat for Global Warming*. Paper presented at the 4S Annual Conference, Montreal, October 11 2007.
- Hoekstra, A. Y. (2010). *The relation between international trade and freshwater scarcity*. Twente: University of Twente.

- IALIIS. (2011). *First Technical Progress Report on a project funded by IDRC entitles "Graduate and Research Program in Forced Migration and Refugee Studies*. Birzeit: Ibrahim Abu-Lughod Insitute of International Studies, Birzeit University.
- ILO. (2010). *Making migration a development factor: The case of North and West Africa*: international Institute for Labour Studies - International Labour Organization.
- ILO. (2011a). *Regional Overview - January 2011*: Regional Office for Arab States, International Labour Organization.
- ILO. (2011b). *Success Africa III: Realising a New Era of Social Justice through Decent Work: Success Stories from Africa*. Geneva: International Labour Organization.
- IOM. (2008). *Irregular Migration from West Africa to the Magrheb and the European Union: An Overview of Recent Trends*. Geneva: International Organization for Migration.
- IOM. (2011). *World Migration Report 2011*. Geneva: International Organization for Migration.
- Joseph, G., & Wodon, Q. (2010). *Using Existing Country Data to Look at Climate Change and Migration: Do Remittances Reach Households Affected by Unfavourable Climate in Yemen?* Paper presented at the First Workshop on Climate-Induced Migration and Displacement in MENA, Marseille, 15-16 July 2010.
- Khatib, I., Gernstengarbe, F. W., & Haj-Daoud, A. (2008). *East Mediterranean Climate Change Trends in the Last Century*.
- KoM. (2009). *Plan Maroc vert*. Rabat: Kingdom of Morocco - Le Maroc Vert and Ministere de l'Agriculture et de la Peche Maritime.
- KoM. (2010). *Green Morocco Plan (2010-2020) (poster)*. Rabat: Kingdom of Morocco - Ministry of Agriculture and Maritime Fisheries.
- Labdelaoui, H. (2008). *Les dimensions sociopolitiques de la politique Algerienne de lutte contre l'immigration irreguliere*. Algiers: Robert Schuman Centre for Advanced Studies, European University Institute.
- Laczko, F. (2010). *Migration, Environment and Climate Change: Assessing the Evidence*. Paper presented at the First Workshop on Climate-Induced Migration and Displacement in MENA, Marseille, 15-16 July 2010.
- Mcleman, R. A. (2011). Settlement abandonement in the context of global environmental change. *Global Environmental Change*, 21S, S108 - S120.
- Nelson, G. C., Rosengrant, M. W., Koo, J., Robertson, R., Sulser, T., Zhu, T., et al. (2009). *Climate Change: Impacts on Agriculture and Costs of Adaptation*. Washington DC: International Food Policy Research Institute.
- RAP. (2006). *Rabat Action Plan*: Conference Ministerielle Euro-Africaine sur la Migration et le Developpement, Rabat 10-11 Juillet 2006.
- SAACS. (2005). *Brasilia Declaration*. Brasilia: South American and Arab Countries Summit, 10-11 May 2005.
- Selby, J., & Hoffman, C. (2011). *CS12: Water, conflict and migration in the Eastern Mediterranean*: UK Government Office for Science: Foresight.
- tbc. (forthcoming). *La modernisation des systèmes d'irrigation dans le Nord-Est syrien : la bureaucratie au cœur de la relation eau et pouvoir*. *Revue Méditerranée* (Special Issue on Water in the Easter Mediterranean Region).
- UNDP. (2009). *Overcoming barriers: Human mobility and development*. New York, USA: United Nations Development Programme.
- Verner, D. (2011). *Adaption to a Changing Climate in the Arab Countries: Towards a Flagship Report (World Bank)*. Paper presented at the COP 17, Durban, South Africa.
- WDR. (2010). *World Development Report 2010: Development and Climate Change*. Washington, DC: The World Bank.
- World Bank. (2008). *Volume Two: Towards an Urban Sector Strategy*: The World Bank, Sustainable Development Department, Middle East and North Africa Region.
- World Bank. (2009). *West Bank and Gaza: Assessment of Restrictions on Palestinian Water Sector Development Sector Note April 2009*. Washington: The International Bank for Reconstruction and Development.
- World Bank. (2010). *Managing the social dimensions of climate change in MENA: Climate change and human mobility*: The World Bank - Middle East and North Africa Region Sustainable Development Department, and Agence Francaise de Développement, Direction de la Stratégie.
- Zeitoun, M., Cascao, A., England, M., & Hodbod, J. (2012). *Water Demand Management and the water-food-climate nexus in the MENA region*. Ottawa: International Development Research Council.
- Zeitoun, M., & Mirumachi, N. (2008). Transboundary water interaction I: Reconsidering conflict and cooperation. *International Environmental Agreements*, 8(4), 297 - 316.

Annex A – Summary of Environmental Change projections in MENA

Summary of climate change projections for temperature and precipitation in the MENA region. Except where stated otherwise, results are based on IPCC (2007a, 2007b) (Zeitoun, Cascao, England, & Hodbod, 2012).

	Temperature	Precipitation
MENA region	Mean temperatures are projected to increase by 0.5 to 1.5°C for the period 2020-2029, and by 2.5°C to 5.5°C for the end of the century (2090-2099).	Annual precipitation projected to decrease generally in the region. The IPCC AR4 multi climate model average change is -12% by 2080-2099 for the Southern Mediterranean region.
North Africa	<p>Warming is <i>very likely</i> (e.g. >90% confidence) to be larger than the global annual mean warming throughout the continent and in all seasons, with drier subtropical regions warming more than the humid tropics.</p> <p>Models predict that the median temperature increase lies between 3°C and 4°C, roughly 1.5 times the global mean response.</p>	Annual precipitation is <i>likely</i> (>80 to 90% confidence) to decrease in much of Mediterranean Africa and the northern Sahara, with a greater likelihood of decreasing precipitation as the Mediterranean coast is approached.

	Temperature	Precipitation
E. Mediterranean	<p>Warming over the 21st century will be larger than global annual mean warming – between 2.2-5.1 °C according to an optimistic emissions scenario (Scenario A1B).</p> <p>Recent runs of the ECHAM4 and HadCM3 global circulation models under the B2 emissions scenario confirm substantial temperature rises of up to 4°C for the eastern Mediterranean region (Hertig and Jacobeit 2007).</p> <p>Regional climate change simulations undertaken by different models have delivered a surprisingly consistent account of climate change over the Mediterranean. Increases in inter-annual variability of temperatures, along, with mean warming, are also forecast to lead to a greater number of high temperature events (Giorgi and Lionello 2007).</p> <p>Projected increase of 2.5-3.7C in summer and 2.0-3.1C in winter (Brown & Crawford, 2009)</p> <p>1.5 °C increase in temperature is expected to shift the Mediterranean climate zone 300-500km northwards, increasing aridity (Brown & Crawford, 2009).</p>	<p>Annual precipitation is deemed <i>very likely</i> (e.g. >90% chance) to decrease in the eastern Mediterranean – decreasing 10% by 2020 and 20% by 2050 with an increased risk of summer drought.</p> <p>The annual number of precipitation days is <i>very likely</i> to decrease in the Mediterranean area. Risk of summer drought is <i>likely</i> to increase in the Mediterranean area. The spatial distribution and timing of precipitation is predicted to increase.</p> <p>Annual precipitation rates are deemed likely to fall in the eastern Mediterranean – decreasing 10% by 2020 and 20% by 2050 – with an increased risk of summer drought. with global warming (Khatib, Gernstengarbe, & Haj-Daoud, 2008).</p> <p>Decreasing winter participation by 2100 of up to 35% compared to late twentieth century timelines. The GLOWA MM5 run between 1958-1996 and 2007-2045 forecasts a mid-century decrease in precipitation by 100 to 200mm in the northern oPt (above 31°N) and a shift in the precipitation season into March and April (Khatib et al., 2008).</p> <p>Significant rainfall declines in the wet (winter) season (-9%) outweighing slight increases in drier summer (+29%) in the Levant (Brown & Crawford, 2009).</p>
Yemen	<p>According to the country's First National Communications to the UNFCCC, Yemen's climate is projected to change significantly over the next 50 years. Temperature across the country is expected to rise between 1.4 and 2.8 degrees Celsius by 2050. Yemen NAPA, 2008</p>	<p>Precipitation and cloud cover patterns are more uncertain – depending on the GCM, rainfall is projected to decrease by about 24% or increase by about 35%. Follow-up regional climatic modelling indicates that rainfall is expected to decrease across the northern regions, leading to increased pressures on the country's delicate agriculture and water resources sectors. Yemen NAPA, 2008</p>

Annex B – Migration patterns in MENA

Selected migration statistics in the MENA region – from Fargues (2008) (see also Fargues (2004) and de Haas (2011)).

Table 2. Migrants Originating from Selected MENA Countries by Region of Residence				
Country of origin (year for data)	Region of residence			
	Europe	MENA	Other	Total
Algeria (1995)	991,796	66,398	14,052	1,072,246
Mauritania (2004)	26,000	31,000	193,000	250,000
Morocco (2005)	2,718,711	213,034	253,641	3,185,386
Tunisia (2005)	779,200	128,900	25,800	933,900
Egypt (2000)	286,000	1,912,729	538,000	2,736,729
Lebanon (2001)	157,030	123,966	325,816	606,812
Iraq (2007)	150,000	2,000,000	150,000	2,300,000
Yemen (1999)	n/a	810,000	n/a	1,000,000
Iran	n/a	n/a	n/a	750,000 to 1,500,000
Palestinian territories 2004**	n/a	4,435,273	n/a	4,983,354
Total	5,108,737	9,721,300	1,500,309	18,1093,427

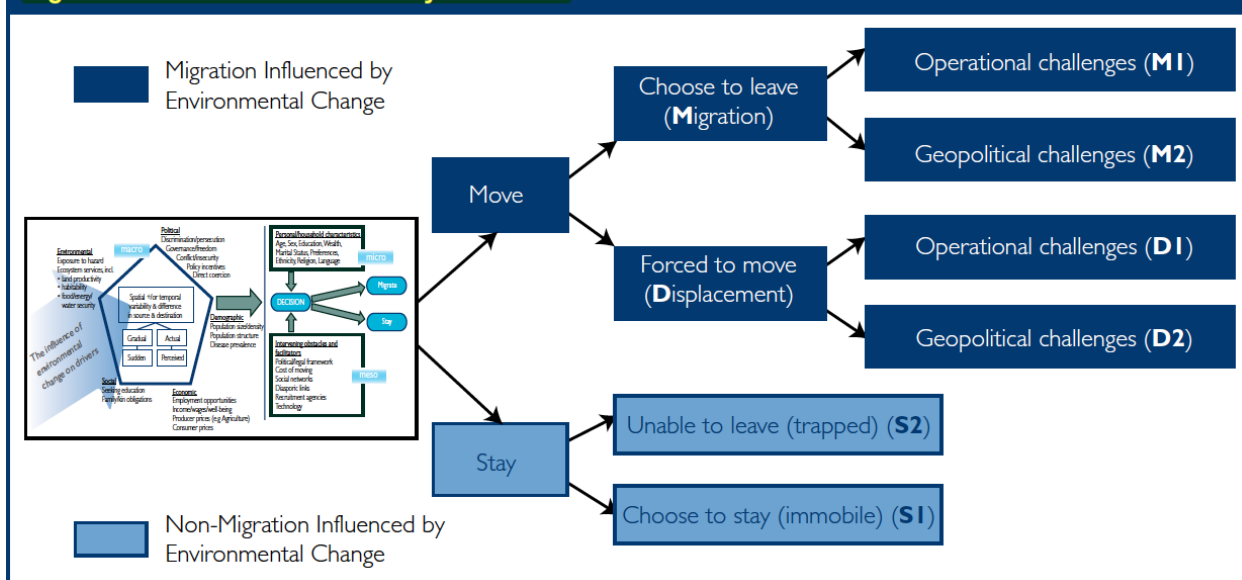
Table 3. Legal and Illegal Immigrants in Southern and Eastern Mediterranean Countries, Early 2000s

Country	Legal immigrants ¹	Illegal immigrants ²				Ratio illegal/ legal (minimum)
		Labor	Refugees ³	Transit	Minimum total	
Algeria ⁴	80,238	Tens of thousands	95,121	Tens of thousands	≥ 10,000	0.1
Egypt	115,589	Tens to hundreds of thousands	104,390	n.a.	≥ 100,000	0.9
Israel	189,000	100,000	1,700	n.a.	≥ 100,000	0.5
Jordan	392,273	100,000 or more	519,477	n.a.	≥ 600,000	1.5
Lebanon	302,315	400,000 to 500,000	22,743	n.a.	≥ 400,000	1.3
Libya	449,065	1.0 to 1.2 million	4,754	Tens of thousands	≥ 1,000,000	2.2
Mauritania	48,000	Few thousands	861	Tens of thousands	≥ 10,000	0.2
Morocco	62,348	Thousands to tens of thousands	1,878	Tens of thousands	≥ 10,000	0.2
Palestinian territories		422,000	0	n.a.	≥ 422,000	n.a.
Syria	55,000	Thousands to tens of thousands	707,422	n.a.	≥ 700,000	12.7
Tunisia	35,192	Thousands to tens of thousands	161	n.a.	≥ 10,000	0.3
Turkey	272,943	Hundreds of thousands	8,852	Tens of thousands	≥ 300,000	1.1
Total SEM	2,001,963	2 to 3 million	1,467,359	≥100,000	≥ 3,662,000	1.8

Annex C - Conceptualising EC-influenced migration

From the 2011 Foresight 2011 *Migration and Global Environmental Change* report.

Figure ES.3: Six human mobility outcomes



Annex D - Synthesis of the Foresight report 'Migration and Climate Change'

1. Scope

The **Foresight "Migration and Global Environmental Change"** report aims to use the best available science and evidence to develop a vision for how human population movements across the world could be affected by global environmental changes between now and 2060, with a focus on the diverse challenges and opportunities for migrants, populations and policy makers in originating and receiving regions.

The report considers '**migration**' to include both internal and international migration, and also considers issues related to 'displacement' (internal and cross-boundary). Further definitions are found in Box 1.7 of the final report¹⁹.

Environmental change is defined as changes in the physical and biogeochemical environment, over a large scale, either caused naturally or influenced by human activities. The most significant global environmental changes include climate change, widespread land degradation and the degradation of coastal and marine ecosystems. Important dimensions include:

- a rise in sea level
- a change in tropical storm and cyclone frequency or intensity
- changes in rainfall regimes
- increases in temperature
- changes in atmospheric chemistry
- melting of mountain glaciers
- land degradation
- coastal and marine ecosystem degradation (see p38 and boxes 2.3 and 2.4)

The **time horizon** for the report's analysis is 2060, with an additional focus on how issues develop by 2030.

2. Summary of key conclusions from Foresight report

- Influence of environmental change on drivers of migration.** The decision to migrate is influenced by five broad categories of 'driver'. These drivers are set out at the vertices of the pentagon in Figure 1.3. Environmental change will influence migration outcomes through affecting existing drivers of migration. This influence is likely to be most pronounced for economic, environmental and, to a lesser degree, political drivers. Environmental change will affect these drivers by impacting, for

¹⁹ All page references are to the final report.

example, rural wages, agricultural prices, exposure to hazard and provisioning ecosystems. See Section 1.2.2 and Chapter 2.

- b. **The complex interactions of drivers can lead to different outcomes, which include migration and displacement.** These movements will in turn differ depending upon the political and socio-economic context, and may vary in their permanence, duration, novelty, speed, distance, and whether they are cross-border or internal. The variations in these types of movement will pose different policy challenges. See Section 1.2.3, Chapter 3 and Sections 4.1-4.5.
- c. **Movement towards vulnerable areas:** powerful economic, political and social drivers mean that some types of migration are likely to continue regardless of environmental change. Indeed, people are as likely to migrate to places of environmental vulnerability as from these places. For example, compared to 2000, there may be between 114 and 192 million additional people living in floodplains in urban areas in Africa and Asia by 2060, in alternative scenarios of the future. This will pose a range of challenges to policy makers. See Sections 3.3 and 4.2.
- d. **The implications of immobility:** Migration is costly, and with environmental conditions such as drought and flooding eroding people's livelihoods, migration – particularly over long distances – may be less possible in some situations. This creates high risk conditions. In the decades ahead, millions of people will be unable to move away from locations in which they are extremely vulnerable to environmental change. They will be 'trapped' in those vulnerable areas, particularly in low-income countries. In some cases people may seemingly be *choosing* to stay (rather than being forced to). This may be a positive outcome and the circumstances which enable it should be considered; but it should also be noted there could be public policy issues related to people staying in dangerous environments, and a seemingly voluntary decision to stay may actually be compromised by socio-political circumstances such as land tenure issues or social networks. See Box 1.3, Chapter 3 and Sections 4.6-4.7.

3. Summary of Foresight policy conclusions

- a. **A key priority should be an increased focus on urban policy in the context of rural-urban migration and increased risks from environmental change** (Sections 7.3, 8.4). Cities are growing through natural population growth and increased rural-urban migration. Cities are extremely vulnerable to future environmental change, especially those in drylands, low-elevation coastal zones or mountain regions. Migrants are particularly vulnerable, as they tend to live in high-density settlements in areas prone to environmental risks, and may not have the human, social or financial capital to protect themselves from these risks. Implications for policy include:

- The need to plan for environmental change in expanding cities, including water availability and quality, long term land loss, more frequent hazards, waste, mobility and congestion;
- Urban planning and policies specifically focused on the welfare of new migrants are required, including in regards to informal settlements and migrant rights in planning processes;
- National and sub-national planners may need to take a more strategic and long-term approach to city planning which recognises future changes in environmental risks and

the likelihood of continuing rural–urban migration, and potentially plans for new settlements.

- b. **A key priority is that adaptation policy, planning and funding should recognise the positive and negative impacts that migration can have on adaptive capacity and resilience** (Sections 6.4, 8.4, 8.5). Policies are being enacted by local, national and international governments to increase resilience and facilitate adaptation to environmental change. It is important that such policies are not developed in isolation of future migration patterns. Some migration may negatively impact a community's adaptive capacity. However, it is often overlooked that migration can deliver benefits to help individuals, households and communities adapt to environmental change; e.g. through diversifying income streams or financial / social remittances. Examples of adaptation projects which have migration at their centre could include:

- projects which look to utilise remittances / diasporas for adapting to environmental change in the sending area;
- projects which look to make migration a more positive experience for migrants through targeted education schemes;
- projects which look to facilitate migration through enabling mobility – e.g. provision of national insurance cards which make it easier to claim benefits anywhere in a country
- regional migration schemes or initiatives – e.g. ECOWAS free movement;

Policies may not explicitly aim to ensure migration contributes to adaptation, but may in effect achieve this – e.g. policies which look to harness migration for development. Given the strong positive correlation between development and adaptive capacity, these are important and relevant.

- c. **Preventing or constraining migration is not a 'no risk' option.** Doing so may lead to increased impoverishment, displacement and irregular migration in many settings, particularly in low elevation coastal zones, drylands and mountain regions. Policies may be explicitly conceived to reduce (internal or international) migration, or may *de facto* do so. The latter may include for example social protection schemes which only provide for people in the area of their birth, or policies which discriminate against migrants. Indeed even some well-intentioned development spending could in effect result in more people being trapped in areas where they will, in the long run, become increasingly vulnerable (p111).
- d. **The Foresight policy framework:** Figure 5.2 provides an overview of the range of policies that can be considered relevant for future migration in the context of global environmental change. Some policies may be more appropriate than others at any given point (indeed it is argued in the report that policies to limit or slow environmental change are unlikely to impact migration over the shorter term (Section 6.2), that a global protocol on 'environmental migrants' is unlikely to be successful (Section 7.2), and that policies to relocate communities should only be considered last the last resort (Section 8.3)).